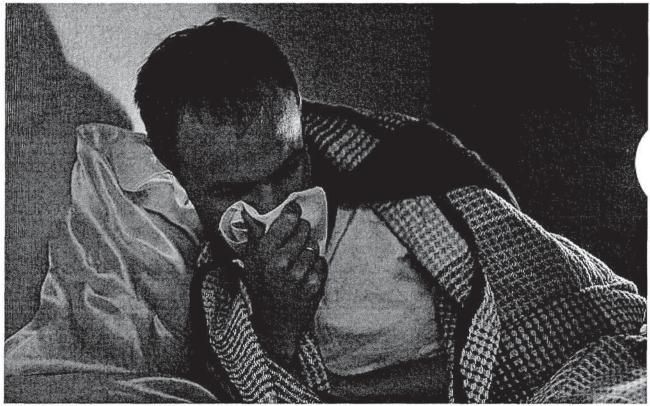
Exhibit 1

Israeli startup gets FDA nod for stent to help sinusitis sufferers

Nasal implant developed by STS Medical aims to dramatically reduce followup operations for millions who suffer from inflamed sinuses

By URVASHI VERMA 9 January 2018, 5:17 pm



Illustrative image of a sick man with a cold (Sinenlky, iStock by Getty Images)

The US Food and Drug Administration has approved a first-of-its-kind nasal implant that aims to dramatically reduce the number of operations for millions who suffer from chronic sinusitis, or inflamed sinuses, the Israeli startup that has developed the device said.

STS Medical Ltd. (S.T.Stent), an Israeli portfolio company of the Trendlines Group Ltd., has developed a self-expanding tube that can be inserted into the nasal passage to prevent common post-surgical complications such as inflammation and scarring.

"This is a significant milestone which will allow us to market our product in the US," said Joseph Flomenblit, CEO of S.T.Stent, in a phone interview. "Our company was new to the FDA approval process. But once the FDA was able to see how well it worked, we got approval without any hesitation." The company announced the approval on Monday.

Millions of people worldwide suffer from chronic sinusitis, an inflammation of the sinuses that is caused by infection or allergy, which results in nasal congestion, face pain and headaches. When drug treatments don't work, functional endoscopic sinus surgery is often performed to increase the flow of air to the nose and sinuses, to improve drainage and remove any diseased tissue. But, because of scarring and returning inflammation, some 30 percent of these operations fail.

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Photo Image of STS Medical Ltd.,'s composite sinus stent implanted in the sinus cavity (Courtesy)

The tube developed by S.T. Stent is made of nitinol, a nickel and titanium metal alloy that is well-suited for sinus tissues because of its unusual elasticity and its shape memory, a characteristic that allows the implant to be delivered into the body in a compact shape and then activated into its functional form.

The tube works by keeping the nasal passage open, allowing the tissue to heal correctly without any blockage. Once the tissue has healed, the stent can easily be removed by a physician in minutes, using a minimally invasive procedure.

The company predicts that the stent will improve patient outcomes and reduce the probability of additional surgical procedures by 50%, even though the initial clinical trial of 30 patients demonstrated 100% success with zero secondary surgeries, said Flomenblit.



Joseph Flomenblit CEO of S.T.Stent (Courtesy)

In the future, the device can be used to treat ailments such as chronic hay fever, help in the healing of nose jobs and provide an alternative to sinuplasty, a balloon-like procedure used to drain mucus blockages in the nose, the company said.

If things go as planned with partners, the implant is expected to be available for use in Israel within six months and in the US by the end of the year, Flomenblit said.

"We are very proud of the progress that the S.T.Stent team has made towards bringing their truly innovative sinus stent to market. We look forward to following their progress in improving patient outcomes and reducing surgeries in a market seeking a solution to this common problem," said Steve Rhodes Chairman and CEO of Trendlines Group, in the company's statement.

US-based medical technology firm Entellus Medical Inc., which focuses on the development and commercialization of products for minimally invasive treatment of chronic and recurrent sinusitis, is one of the companies that has expressed interest, said Flomenblit. Case: 1:15-cr-00018 Document #: 268-1 Filed: 08/02/18 Page 4 of 55 PageID #:2053 The company has two other patents pending with the FDA and several partners and distributors have expressed interest, said Zeev Brookfield, chairman of S.T.Stent, in the press release.

Flomenblit confirmed that several other products are awaiting FDA approval, but did not revealed specific details.

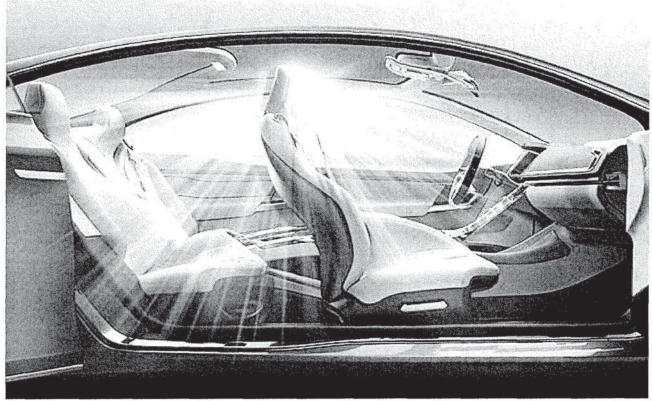
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Car sensor aims to prevent infant death caused by heatstroke

Israeli startup Guardian Optical Technologies uses micro-vibration technology to detect heartbeats

By URVASHI VERMA 14 January 2018, 3:22 pm



Guardian Optical Technologies has developed a car sensor that uses micro-vibration technology to detect heartbeats (Courtesy)

An Israeli startup, Guardian Optical Technologies, has developed a car sensor that it says is capable of saving lives of infants accidentally left in cars by detecting the smallest heartbeat.

In the US a child dies from vehicular heatstroke every ten days, often because a parent or caregiver forgets that there is a child in the backseat.

"Tragedies like these are preventable. Guardian is dedicated to protecting drivers and passengers, so incidents when infants and children are left in hot cars are a particularly sensitive area for us," said co-founder and CEO Gil Dotan in a phone interview.

The company's sensor uses optical motion analysis to detect the tiniest movement within the car, including an infant heartbeat. When it detects motion, it can notify a driver who has already left the car and automatically turn on the air-conditioning.

"We knew we were on to something because our technology solved a major problem that existing visual technologies alone could not address. If a camera could not see it, it would not be able to detect it," said Dotan.

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Gil Dotan, CEO of Guardian Optical Technologies (Courtesy)

The patent-pending sensor combines two-dimensional video image recognition with 3D depth mapping and optical motion analysis.

Competing products, like that of Israel-based Vayyar, which has developed a sensor that uses radio waves to monitor the interior of cars, do not provide measurements as precise as that of Guardian, said Dotan. The Guardian sensor is also capable of recognizing faces, he said.

Automakers can cut costs by.

"Currently, manufacturers use different kinds of sensors for airbags, seat belts and steering wheels... We have just one sensor that can enable all these features," Dotan said. A conservative estimate puts the savings from replacing existing multiple car sensors with his company's single sensor at \$20 per car, which for some automakers would translate to \$200 million savings per year, he said.

In the future, as driverless cars emerge in the marketplace, data collected by the sensor will be used by fleet managers, insurance companies, and first responders to monitor the car's interior, said Dotan.



Car installed with Guardian Optical Technologies' cabin monitoring single car-sensor technology (Courtesy)

"As autonomous vehicles proliferate, fleet managers will need to know what is happening in the interior of their cars, like how many people are in a car, when they disembark, even what kind of media or beverages they like to consume," said Dotan.

"Insurance companies will want to know what happened during an accident to determine claims. First responders can analyze the data from the sensor to determine the impact and injury in vehicular accidents before arriving at the scene, potentially saving more lives," he added.

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The sensor is beyond the proof-of-concept stage, and the company is providing manufacturers with advanced kits for field testing with an eye toward full integration in 2020-2021, according to Dotan. He declined to reveal which companies are currently field testing the product.

In December, Guardian received \$5.1 million in series A funding from Maniv Mobility and Mirai Creation Fund, marking the first time that Toyota Motor Corporation and Sumitomo Mitsui Banking Corp. have invested in an Israeli company.

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• Startup Israel • Israeli startups • Guardian Optical Technologies • Auto tech • Gil Dotan

New toolbox for Israeli startups aims to help navigate US healthcare system

Start-Up Nation Central and PwC Israel and Health Research Institute hope the kit will help boost collaborations with US institutions

By URVASHI VERMA 16 January 2018, 2:46 pm



Sharon Shapira, manager of the Digital Health Sector Strategic Projects at Start-Up Nation Central, speaks to attendees at the Digital Health Toolkit & US adoption of Digital Health Solutions launch event, January 3, 2018. (Courtesy/Start-Up Nation Central)

Start-Up Nation Central, a nonprofit organization that aims to connect Israeli startups with investors, and PwC Israel and Health Research Institute have jointly set up a digital health toolbox for Israeli startups, to help them navigate the intricate US healthcare system.

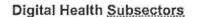
"The aim of the toolkit is to provide early and mid-stage startups interested in piloting and commercializing products in the US, with a roadmap of how to navigate the US healthcare system," said Sharon Shapira, manager of Digital Health Projects Strategic Sector at SNC, in a phone interview.

Israeli venture capital funding in digital health startups jumped by 30 percent last year, to almost \$340 million, compared with 2016, with a total of 470 digital health startups operating in seven sub-sectors. The most substantial sectors were digital therapeutics at 36%, remote monitoring at 18%, and clinical workflow at 17%, according to data from SNC.

The free toolbox is actually a digital report that provides startups with practical information and tips about how to target US hospitals for pilots, work with key stakeholders and executives, structure contracts, and navigate the FDA process, Shapira said.

ne Israeli Digital Healthcare breakdown





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Israeli Digital Health funding



Start-Up Nation Central (SNC) data on Israel Digital Health Start-Ups (Courtesy SNC)

The most promising areas for digital health cooperation are artificial intelligence, big data, fintech, and cybersecurity healthcare solutions, Shapira said. In addition, Israeli healthcare companies have a "competitive advantage" over their US counterparts in research and development, because they can access the database of Israel's health system, which for over 25 years has been collecting data on patients and is a "treasure of long-term aggregate patient and health-related outcome data," said Shapira.

The new toolbox will also help Israeli entrepreneurs navigate legislative changes in the US healthcare system as the transition from Obamacare to Trump's health care plan solidifies, she added.

A visit aimed at building initiatives and programs to connect Israel to strategic healthcare hubs in US cities Houston and Chicago is planned for later this year, Shapira said.

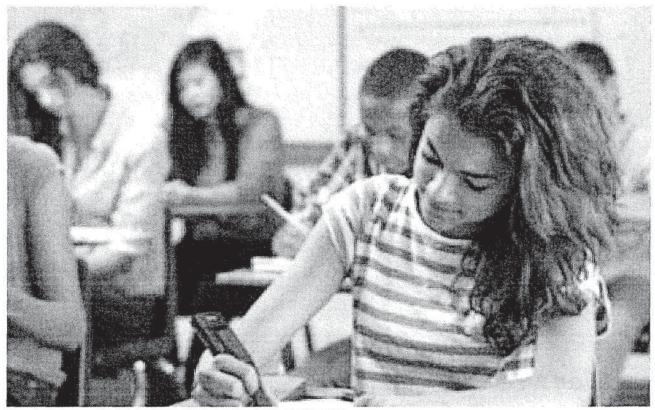
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Israel's Wizcomtech designs pen to make reading easier for kids with dyslexia

New device aims to help the 14% of school-age children who have trouble reading, writing and understanding the meaning of words

By URVASHI VERMA 25 January 2018, 2:58 pm



Wizcom's electronic pen aims to help children with dyslexia and reading disorders (Courtesy)

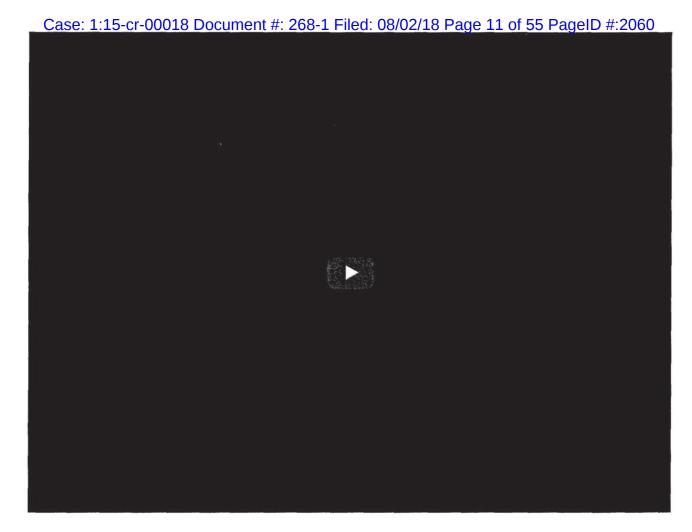
Modiin-based Wizcomtech one of the largest producers of pen-shaped handheld scanning translators, said it has clinched a \$5 million deal with a US distributor to sell a new pen that helps children with dyslexia.

The company's Quicktionary translation pens, available in more than 24 languages, are already being used by students in English classes and matriculation exams in junior high and high schools in Israel, as well as by students in the UK for their foreign language studies. The electronic pen-shaped scanners immediately translate text, from and to a variety of languages, onto an LCD screen set within the pen.

Now, the company is turning its sights to the dyslexia market.

"We saw a demand in the market for a slightly different product than our existing translation pens and developed a pen which offered a solution for children with dyslexia," said Dror Drukman, CEO of Wizcomtech.

The reading pen scans text and breaks words down into syllables using a digital voice, and gives students synonyms for the words they are reading so that they can better understand and remember them in the future.



Dyslexia, a disorder which affects nearly 14 percent of school-aged children and young adults in the US, according to data from the International Dyslexia Association, causes children and adults to have trouble reading, spelling, writing and understanding the meaning of words, despite possessing high levels of intelligence.

Some of the world's leading entrepreneurs including Walt Disney, Henry Ford, Charles Schwab, Steve Jobs, and Richard Branson have been diagnosed with dyslexia.

The pen, offered in English and Swedish, was created by working closely with education professionals and making use of case studies, the company said.

Similar products on the market for people with dyslexia offer fewer languages and features, the company said. C-Pen Reader, for example, is a pocket-sized device that reads text aloud using a digital voice.

"Competing products are based only on reading, not other functions such as syllable division which are relevant to children with reading disabilities. Our pen is developed using special dictionaries and algorithms that divide words into syllables making it easier for children to recognize words," Drukman said.

Wizcomtech says it expects to complete a Chinese-language version of its pen in the next few months and enter the Chinese market with a conservative estimate of 250,000 units in the coming years; the monetary value of which is tens of millions of dollars, said Drukman.

"China is a huge market for us. We are currently in dealings with a leading Chinese organization on dyslexia and distributors regarding the implementation of our pen and look forward to building partnerships with them in the near future," said Drukman.

The company's existing translation product, Quicktionary, is already being distributed in China, the company said.

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* Startup Israel * Israeli startups * education technology * Wizcom Technologies Ltd. * Quicktionary * Dror Drukman

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Yes we kendo! Volunteer martial artists teach kids with cancer to fight the pain

What makes you stronger? Nonprofit Kids Kicking Cancer finds the answer in breathing, punching and kicking - and paying it forward

By URVASHI VERMA | 5 February 2018, 9:21 am



Jill Sharnes, director of Training and Certification at Kids Kicking Cancer, teaching children breathing techniques (YouTube screenshot)

Fifteen martial arts instructors are sitting around a conference table, trying not to cry.

Also present, but only on a video screen, are a group of children fighting cancer, bald from chemo, hooked up to tubes. In wheelchairs and hospital beds, they hold up signs saying "I am stronger." Like an anthem, they sing along to Kelly Clarkson's pop hit "Stronger."

The martial arts teachers have gathered in the coastal town of Herzliya to train to become volunteers for Kids Kicking Cancer Israel, a nonprofit that uses martial arts techniques to help children with cancer and other serious illnesses achieve a sense of physical and emotional well-being through free martial arts classes, counseling, and other kinds of support to families.

"Though it may be sad to watch the video, these children are an inspiration. They are modern-day heroes," Jill Shames, KKC's director of training and certification tells the volunteers at the program's weekly meeting.

Representing Israel's multifaceted social mosaic, the volunteers are a mix of Orthodox and secular Jews, Arabs, and Bedouins, coming from all parts of the country. They may find themselves at political and ideological odds with one another, but there is a common thread: a strong desire to help children with cancer improve their lives through martial arts therapy.



"To cancer, we are all the same; it doesn't care whether we are religious or not, Jewish or not. We are here with a purpose and are cooperating for a good cause," said Miki Chayat of Bnei Brak, one of Israel's most ultra-Orthodox Jewish cities.

Sitting across from Chayat was Ward Abo Quiedar from a Bedouin village in the Negev, a karate expert and coach. He decided to KKC's volunteers when he learned that children with cancer can be helped through martial arts.

Abo Quiedar wants to help these children "fulfill their dreams," he said.

Globally some 300,000 children are diagnosed with cancer each year. While the survival rates of childhood cancer have dramatically increased to more than 80 percent, nearly one-quarter of those who survive face at least one chronic health condition such as heart damage, second cancers, cognitive impairment and growth defects, according to the American Childhood Cancer Association.

KKC, founded by Detroit-based Rabbi Elimelech Goldberg, who decided to help children and parents cope with the disease after he lost his two-year-old to leukemia, is now in more than 20 cities across the world.

Launched in Israel more than five years ago, the local program is under the helm of Danny Hakim, an Australian-born Israeli, two-time world karate silver medalist and the founder of Budo for Peace.

Power, peace, and purpose are the foundation of KKC's program, and these principles are directly tied to its methodology.

Children are taught to release their anger and frustration by kicking and punching pads, said Hakim. They also learn specialized breathing, meditation, and visualization techniques, which helps them remain calm during painful and invasive medical procedures. The methods enhance their ability to deal with chronic stress, strengthening their involuntary nervous system, he said.



Volunteers conducting pain exercises using rubber bands at the KKC volunteers meeting in Herzliya January 21, 2018. (Courtesy)

Moreover, the program encourages children to teach the techniques they learn to their classmates, and even in front of large audiences such as corporate meetings and community events.

Hakim said this is one of the most impactful tools because it gives children a sense of pride and purpose after their lives were turned upside down by their cancer diagnosis.

Volunteers, who must have a black belt in martial arts and previous teaching experience, undergo a 10-hour course followed by two months of training during which they learn how to work with the children by observing veteran volunteers.

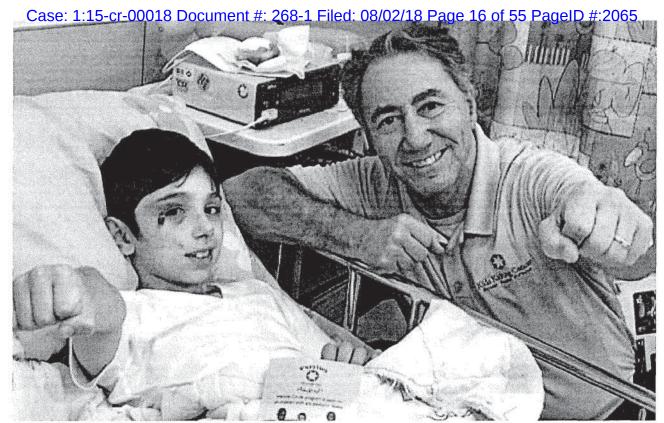
Jill Shames, who oversees the volunteer training for KKC's programs in Israel, has been a social worker for more than 25 years and is a karate teacher. She said that something "deeply spiritual" is gained through the practice of martial arts that these volunteers bring to the children.

"These instructors understand the power of giving," she said. The idea that a person who gives is more powerful than one who takes "resonates with the kids, who are continually having to take things, whether it's medication or assistance from others," said Shames.

"Becoming a giver gives the kids control. They learn this from their instructors," she said.

As far as the instructors go, "I want people who are studying the martial arts to know that there are other ways to give back than just working within their own communities," she added.

A deep sacred bond develops between the instructors and these children, said Hakim. While the children gain a sense of power and purpose, the instructors learn how to come face-to-face with death, which is a part of the Japanese tradition of samurai, said Hakim.



Danny Hakim, chairman of Kids Kicking Cencer Israel and founder of Budo for Peace, teaching a young boy who suffered serious injuries from a car accident. (Courtesy)

A 2016 study by a Wayne State University professor of pathology who is also KKC's medical director, Martin Bluth, found a 40 percent overall reduction in pain after a one-hour martial arts session teaching meditation and movement, with the greatest reductions seen in older children and those who started out with the most pain. The study looked at 64 children enrolled in the KKC program over a period of 12 months.

"Pain — yes, that was something I had to learn to live with," said Zoe Eliraz, who was diagnosed with breast cancer six years ago and is now in training to become a KKC volunteer. "Martial arts gives you a way to deal with pain without suffering," Eliraz said.

"In martial arts, you get kicked around a lot, and the pain becomes fun. When you learn to just feel the pain, it isn't so terrible, but when you believe the story that 'I am miserable because of my condition,' it's much worse," said Eliraz, who hopes to pass this lesson on to the children in the program.

The KKC program is currently in six hospitals in Israel and plans to add four more by the end of this year. The program is also working on expanding its reach into Turkish and Jordanian hospitals that have expressed interest, said Hakim.

"We are growing very fast, and I can see us expanding into the Middle East and Europe very soon," Hakim said.

The program's new CEO, Nir Zamir, said that martial arts therapy is a kind of innovation.

"We are exploring new ways to find families and developing partnerships with community organizations and nonprofits to integrate with their programs," said Zamir, who was formerly an advertising executive for Dell.

Zamir said he learned about the program thorough a magazine article about Hakim and his work with Budo for Peace and decided to do something more meaningful.

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· Israel Inside · cancer · Kids Kicking Cancer

Now you can count your chickens before they hatch, instead of culling them

Israeli startup says it can save seven billion male chicks from sure death by detecting their gender while they're still eggs

By URVASHI VERMA 11 February 2018, 1:31 pm

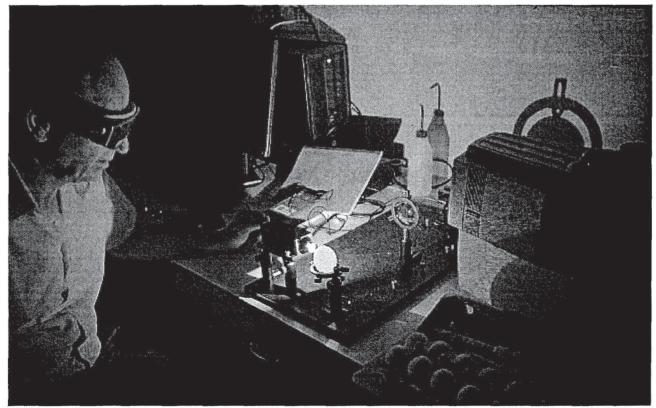


Photo of Dani Offen, professor at the Sagol School of Neuroscience at Tel Aviv University and co-founder and chief scientific officer of eggXYt,in lab testing a male egg prior to hatching (Courtesy)

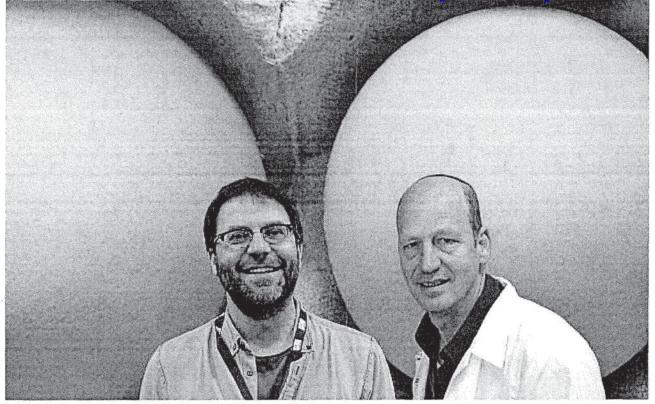
Each year more than seven billion fluffy little yellow chicks worldwide are tossed into a grinder or gassed to death less than 24 hours after hatching because they are of no use to egg producers.

Now, an Israeli startup, eggXYt, has developed technology that can detect their gender before hatching, saving the egg industry nearly \$2 billion per year and eliminating the senseless killing.

"These birds will be hatched to their death. This a man-made problem which started hundreds of years ago when humans started selecting eggs for consumption," says Yehuda Elram, co-founder and CEO of eggXYt.

The killing of male chicks, known as chick culling, is standard practice in all industrialized hatcheries and has haunted animal rights organizations and egg producers for many years, said Elram.

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EggXYt co-founders Yehuda Elram CEO (left) and Dani Offen, chief scientific officer (Courtesy)

Farmers have been artificially boosting the growth of two kinds of chickens, the so-called "broilers" and "layers." The broilers are chickens that can grow to 2.5 kilos (5.5 pounds) and are meant to be consumed as meat because of their size. Layer chickens grow to only 400 grams (1 pound), and female layers produce 100 more eggs each year than do broilers.

While female layer chickens are valuable to egg producers because they can lay many eggs over a lifetime, male layer chicks don't produce eggs nor do they have enough meat on their bodies for eating. So they are killed immediately after hatching, explained Elram.

Elram, the grandchild of chicken farmers, had been practicing law for more than 20 years when the idea came to him and his good friend Dani Offen, a scientist who is co-founder and chief scientific officer of eggXYt, to distinguish between the eggs using CRISPR, a gene-editing tool.

CRISPR allows scientists to insert a detectable biomarker into the chicken's DNA which helps mark the gender of the eggs without any side effects, said Elram.

Once the eggs are laid and hatched, they are sent through a scanner with an optical sensor that identifies the male eggs by giving off a yellow fluorescent glow. These male eggs could be salvaged and consumed by humans or used as protein for other food products, said Elram.

EggXYt, currently in proof of concept phase, has received several grants and awards from the Israel Innovation Authority, MassChallenge, the European Commission, the Green Impact Summit and TechCrunch Disrupt. It expects to start a pilot in early 2019.

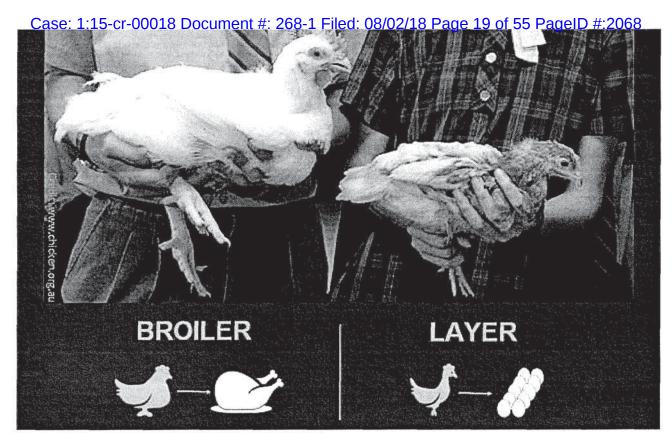


Photo depicting difference between the size of broiler and layer chickens. (Courtesy)

To those who have reservations about the long-term impact of modifying the DNA of hens, Elram says that things need to be "measured by impact and safety."

"What we are doing is 100 percent safe. A similar technology has already been approved by the US Food and Drug Administration (FDA) in case of salmon which is being sold in North America," said Elram.

In order to ease pressure caused by heavy fishing of wild salmon populations, the FDA approved the use of genetically modified salmon which require less food and can grow to full size in 18 months rather than three years, in late 2015.

The outcome, in this case of the chickens, is very slightly genetically edited chicken, which Elram said is a small price to pay when you consider the broader ethical issues related to male culling.

More than 18 months ago, the United Egg Producers negotiated an agreement with the Humane Society of the United States to find a solution to stop the senseless killing of male chicks by 2020. Unilever, the world's third-largest consumer goods producer which buys more than 350 million eggs each year in the US alone for brands like Best Foods, Hellmann's, Ben & Jerry's and Slim-Fast, launched a major drive to end male chick culling more than three years ago. However, to date, no viable solution has been approved by the FDA or governing bodies in other countries to solve the problem.

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· Startup Israel · Israeli startups · genetic engineering · genetic editing · CRISPR · eggXYt

Checkout app by Israel's Supersmart follows Amazon Go's lead

Cashier-less payment systems are expected to process more than \$78 billion in transactions by 2022

By URVASHI VERMA 12 February 2018, 1:47 pm

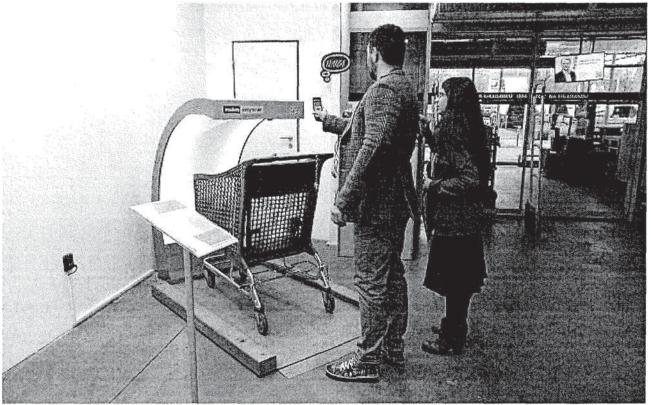


Photo of shoppers in Prague using Supersmart technology at a grocery store. (Courtesy)

The arrival of Amazon Go has shoppers saying goodbye to long checkout lines and retailers saying hello to the idea of completely cashier-less systems. This, for Israeli entrepreneurs like Yair Cleper, CEO and founder of Supersmart, is a huge boon.

Last month, Amazon. the American e-commerce behemoth, introduced a new kind of store, Amazon Go, in which no checkout is required. Customers simply walk out with their items and are charged automatically as they exit.

Israel-based SuperSmart has created a similar technology using a mobile app that enables shoppers to check out in seconds without the need for a cashier.

Shoppers download an app onto their phones to scan grocery items and place them in their carts. At the point of checkout, sensors located in cart docking stations detect traceable signatures or barcodes on products to verify that the contents of cart and those logged into the phone are the same. The system completes the transaction in less than three seconds, the company says.

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Carl Douglas McMillon President and CEO of Wal-Mart Stores, Inc (left) with Israeli entrepreneur Yair Cleper CEO and Founder of Supersmart at the Osher Ad store in Tel Aviv. (Courtesy)

Cashier-less checkout systems for retail and grocery are expected to process more than \$78 billion in transactions by 2022, up from an anticipated \$9.8 billion last year, according to a new study from Juniper Research.

Within the next five years, more than 5,000 retail outlets are expected to deploy cashier-less systems, and the number of consumers using checkout apps is expected to reach 30 million, the study found.

Unlike Amazon Go's technology, which is only available at the company's stores and currently functions in an 1,800 square foot space, Supersmart is fully scalable and adaptable, said Cleper. It can be used in small convenience shops as well as big box stores with more 100,000 items, Cleper said.

The system is already in use at the Osher Ad grocery stores in Tel Aviv and its Shamgar location in Jerusalem as a result of a strategic partnership that the companies entered into a year and a half ago. Supersmart has also launched several pilots in Europe.

"The feedback has been amazing. We have been able to reach thousands of unique shoppers per month with 82 percent of customers returning to same store and using our app again," said Cleper.

Other vendors selling similar applications do not have a full verification process, specifically the sensor technology that Supersmart has created, said Cleper. Competitors like Zebra, which provides handheld scanners to consumers that look like a phone, have also integrated Supersmart technology into their devices.

Cleper said the idea came to him three and half years ago when he went back to the same supermarket where he used to shop with his mom — and saw that nothing had changed.

"I thought the smartphone could go much deeper into the process of supermarket shopping, which is a \$23 trillion industry. Research has shown that unlike other retail shopping items like clothing and electronics, which are increasingly moving online, grocery shopping in stores is a social experience that is here to stay because people like to touch and feel food with their hands," said Cleper.



But the food retail sector suffers from two large issues: inventory loss — when items are incorrectly scanned or shoplifted — and out-of-stock situations. A recent study found that nearly 14 percent of items at self-checkout counters are not being scanned. When an item is out of stock, customers are tempted to purchase the items elsewhere, causing retailers to lose a sale.

Supersmart wants to tackle both issues.

"We are currently focused on solving the two of the largest issues in retail; inventory loss and out of stock," said Cleper.

Supersmart is solving the out of stock issue by enabling shoppers to order items they forgot to buy at the store or are starting to run out of at home by using the app on their phones, said Cleper.

Cleper said that the system's hardware generally costs from \$2,000 to \$4,000 and that integration costs are dependent on the scale of the project. He added that the return on investment is recaptured within months from savings realized by the decreased loss of inventory and customer retention.

The Rosh Ha'ayin-based company, staffed with 12 employees, is working on its next round of investment which would be used to scale, said Cleper.

Cleper, a former software engineer for the Israel Defense Forces, started his first company when he was 21 years old. Since then Cleper has co-founded several startups in augmented reality, fintech and IT.

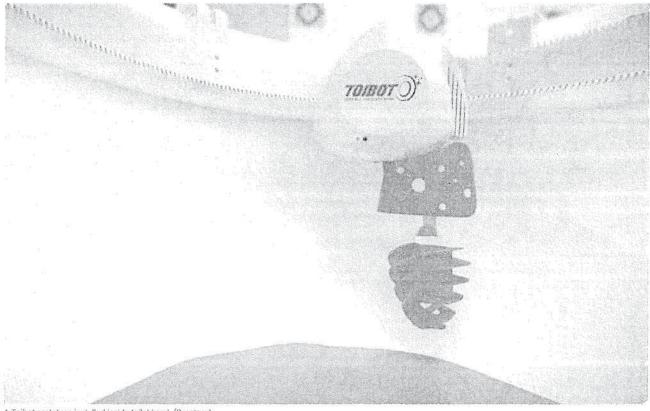
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Israeli startup hopes to clean up with handsfree toilet brush

Haifa-based Toibot's robots do the dirty work in the bathroom, cleaning and disinfecting toilet bowls

By URVASHI VERMA 13 February 2018, 1:35 pm



A Toibot prototype installed inside toilet bowl. (Courtesy)

Whether you are Donald Trump, who was recently offered a 24-karat gold toilet by the Guggenheim, or you have a throne made of standard white porcelain, keeping it clean is an age-old challenge.

But that difficulty may finally have met its match, thanks to two Haifa-based entrepreneurs, David Alush and Daniel Tokarev, who have created a robot capable of cleaning a toilet without its human owner having to touch a toilet brush or bowl ever again, they say.

"We were asking ourselves, how can it be possible that we have autonomous cars, but there's no solution for cleaning a toilet? For 90 years the manual toilet brush has been the only cleaning tool for the filthiest place in the home," said Tokarev, co-founder and CEO of Toibot.

Toibot is a battery-powered robot that cleans your toilet at the touch of a button. It attaches to any toilet and automatically brushes its entire surface while dispensing capsules that clean, disinfect and polish, keeping the toilet 99.9 percent bacteria free.



Before the advent of the toilet brush people used animal tails to clean toilets, and even today the process of cleaning the toilet and storing a dirty brush remains unpleasant and unhygienic, said Tokarev.

The company says its product saves money by doing away with the need for cleaning supplies such as rubber gloves, a toilet brush, paper towels, disinfectant and all-purpose cleaners. The average consumer spends \$25 to \$30 per month for toilet care products, according to research done by Tokarev.

"Our only competitor is the human hand and a toilet brush. Nothing else exists on the market which does the job with just the push of a button," Tokarev said.

The company is currently designing two prototypes, one for individual use in households and another for commercial and industrial for use in restaurants, airplanes, hospitals and schools. The company plans to launch a pilot in the first quarter of 2019 in all major Israeli cities.

Toibot, which is expected to hit the retail market next year for a price tag of \$79, has more than 25,000 units in preorders from online customers and distributors. The company holds patents in the US, Europe, Canada and Brazil.

"We are getting a lot of interest from large distributors in commercial and residential markets who are looking to be exclusive with our company," said Tokarev.

Initially funded by friends and family, the company says it is looking for investors to help finance Toibot's final production and manufacturing phase.

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David Alush (left) and Daniel Tokarev (right), co-founders of Toibot (Courtesy)

READ MORE:

· Startup Israel · robotics · robots · toibot · Israeli startups

Middle East martial arts masters hit the mat for amity

With talk of deflecting violence, not spreading it, a gathering of leading global athletes convenes in Israel in a show of respect

By URVASHI VERMA | 4 March 2018, 1:33 pm



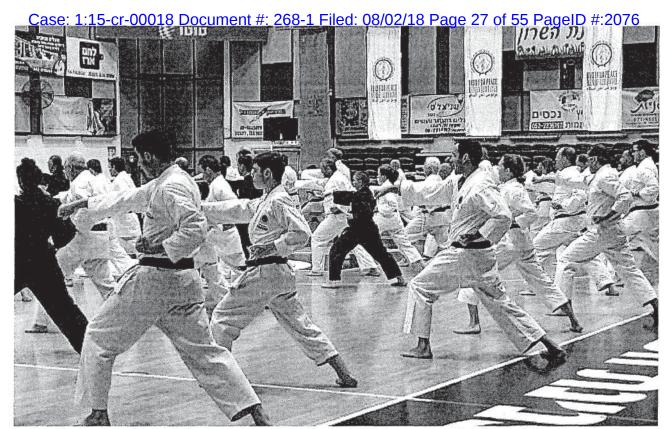
Two young students practicing martial arts techniques during the Budo for Peace Seminar, February 13, 2018 (Urvashi Verma/Times of Israel)

What do an instructor from Iran who chose the path of peace, a Jordanian who trained in martial arts with the royal family in Dubai, an Egyptian who serves in the karate federation in Iraq, and a Turkish man who promoted karate for women in his country have in common?

They were all participants in the Budo for Peace International Martial Arts Seminar that took place in Raanana last month, marking the fourth anniversary of a gathering of leading athletes who are using the martial arts to promote coexistence, respect, and peace. They hailed from the Middle East, Japan, Australia, and Greece.

The visiting sensei, or masters, conveyed a strong and united message that the trek was not politically motivated in any way but instead a call to promote values of peace among the youth.

"Our purpose is to teach younger generations to know peace better, not by violent means but by doing martial arts and showing the values of respect to one another — most importantly not to hurt one another," said Mikdat Kahraman, a master martial arts teacher from Ankara, Turkey.



Israeli martial arts instructors and students learning karate techniques during training at the Budo for Peace seminar on Feb 13., 2018 (Urvashi Verma/Times of Israeli)

Most traditional martial arts follow a code of conduct that demands and gives respect, arouses humility and develops a sense of equality among its followers. Such behaviors as wearing simple uniforms, practicing barefoot and competing on mats, which are seen as a sacred space, help connect with the values of humility, respect, and peace, they say.

"As you can see, no one here is different. We are not separating people by politics or religion. Our white dress reminds us we are all equal," said Ghazi Keyvan, who helmed Iran's team at the Allstar Europa Championships in karate, as he prepared to lead the training exercises.

While competitors in other sports do not want to shake hands with Israeli competitors, due to political and ideological differences, the entire philosophy of martial arts is to demonstrate respect toward one another, said Keyvan.

Respect is one of the most important and longstanding aspects of martial arts. Many schools require you to bow upon entering as a sign of respect, among other customs that students have to uphold, he added.

The two-day seminar opened with an advanced training course in which master-level practitioners from Turkey, Iran, Jordan, Egypt and the Palestinian Authority taught Israeli instructors and students martial arts techniques and facilitated the exchange of new ideas.

The idea that one should control aggression without inflicting injury upon one's opponents is a fundamental teaching in the sport, said Mohamed Saied, who is another master teacher and executive director of the Georgian National Karate Federation.

The practice of martial arts, although it appears violent, redirects the physical force and anger of opponents without harming them. That is why many of the techniques involve deflecting the opponent's kicks and throws than attacking the opponent directly, he said.

On the second day more than 300 children, young adults and their teachers from Arab, Jewish orthodox, secular, Ethiopian and Bedouin backgrounds, who are part of the Budo for Peace network of martial arts schools, participated in the martial arts practice and training with the visiting masters.

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For Danny Hakim, founder and chairman of Budo for Peace (BPF), who has tirelessly worked to help people, especially youth, to connect and know others from across the world through karate for more than 14 years, these values are a core foundation that can help to promote peace across in the world.



Left to Right Australian Ambassador to Israel Chris Cannan, Turkish Ambassador to Israel, Mekin Mustafa Kemal Ökern Danny Hakim founder and chairman of Budo for Peace; Koji Tomita Japanese ambassador to Israel at the Budo for Peace seminar on Feb 13, 2018 (Nimrod Glikman)

A grand ceremony was held at the end of the evening attended by community members and distinguished guests including the ambassadors of Japan, Turkey, and Australia.

"I have been here as an ambassador for two years. I am gratified to know that so many Israeli people have embraced martial arts and are using it as a means for promoting peace," said Koji Tomita, Japan's ambassador to Israel, who commended Hakim for his drive, energy and leadership for the project.

The Turkish ambassador to Israel, Mekin Mustafa Kemal Ökem, who attended with his wife and son, both karate practitioners, said that he was "delighted to see martial arts being used to teach younger generations the importance of the vision of peace."

"When it comes to arts, sports, and music all of humanity speaks the same language, that's why it's the best way to convey piece solidarity and friendship. This is what we should be supporting," said Ökem.

In the closing program, Hakim talked about how getting together in forums like the seminar helps to break down ignorance and fear.

"It takes a great amount of courage for these masters to come here today to Israel," he said.

"Part of the process is to create exchanges between children from all sectors of society in Israel. Through our work we break down ignorance and fear and build bridges between people and communities," Hakim said.

READ MORE:

Wisconsin looks to Israel tech to solve water pollution woes

The Badger State's water council joins forces with Israel Innovation Authority to fund Israeli water technology startups

By URVASHI VERMA 8 March 2018, 2:14 pm



A lake in Wisconsin (jocrebbin, iStock by Getty Images)

Wisconsin, a US state whose name evokes flowing rivers and abundant lakes, has an endemic water problem of nutrient pollution and is turning to Israeli startups to solve it.

Nutrient pollution is caused by agriculture, storm water, wastewater and fossil fuels, and is creating an excess of nitrogen and phosphorus in Wisconsin's water supplies, harming the economic viability of its freshwater lakes and drinking water, experts say.

Now, a partnership forged by Israel's Start-up Nation Central has Wisconsin's The Water Council and the Israel Innovation Authority working together to find new ways to solve the problem, which is common in many parts of the US.

"Israel has led the wave of innovation in water management across the world, and our companies are strategically positioned to solve problems in many areas," said Lee Recht, manager of Strategic Partnerships at Start-Up Nation Central, in a phone interview.

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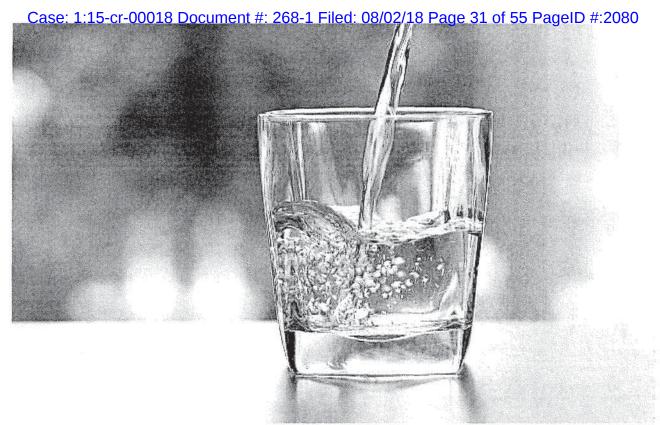
Lee Recht, manager of Strategic Partnerships at Start-Up Nation Central with Dean Amhaus, president & CEO of The Water Council, left to right, visiting the Zuckerberg Institute for Water Research (ZIWR) of the Ben Gurion University with a delegation in Nov. 2017 (Courtesy Ido Weisman)

Israel, a country with wide expanses of arid desert, has become a leader in such water management technologies as irrigation, wastewater treatment and desalination. Israeli startups are taking advantage of the existing expertise and resources to develop techniques that can be applied globally, said Recht.

Today, nearly 200 Israeli companies are focusing efforts in the water technology sector. In 2014-2017 a whopping \$263 million in funding was raised by Israeli startups in the water-tech industry, \$73 million of it in 2017 alone, according to data compiled by Startup Nation Central. Nearly 50 percent of the companies that received funding were in the wastewater management sector.

In a formal request for proposals, The Water Council and Israel Innovation Authority have committed to provide nearly \$2 million in funding to Israeli startups that are in late-stage development or have deployed their products or services and are interested in expanding their reach to North America.

"We see our partnership with the Israel Innovation Authority as less about addressing a problem and more of a great opportunity for both parties to find solutions for our wastewater treatment and to establish Milwaukee as the center for Israeli companies to set up their US operations," said Dean Amhaus, president and CEO of The Water Council, in an interview.



Illustrative image of a glass of water (pinkornelet, IStock by Getty Images)

Companies selected will have access to US water management infrastructure and facilities in the greater Milwaukee area, a network of more than 200 water technology firms including Johnson Controls. They will also gain local community connections from the Milwaukee Jewish Federation, said Amhaus.

Israeli companies can prove and test their products and services in a "living lab" environment in North America, and find opportunities to scale through a network of diverse end-users across multiple settings, Amhaus said.

The program will choose and fund a small number of projects that will run over a 9-15 month period, with a maximum budget of \$250,000 per project, and the costs will be shared between the company, the Israel Innovation Authority, and the Water Council.

Technological solutions that deal with the management of storm water, such as improving water runoff quality and quantity, sewer management, nutrient removal, energy production, plant cost reduction and other plant optimization technologies are being sought for beta testing at sites, said Kevin Shafer, executive director of the Milwaukee Metropolitan Sewerage District, in an interview.

"We are interested in working with companies using sensor technology and AI and machine learning to solve water issues," Shafer noted.

For the United States, the problem of nutrient pollution costs the economy nearly \$2.2 billion each year from losses in diminished property values and recreational uses of water, according to the US Environmental Protection Agency.

"The opportunity to solve the world's water problems can be a huge financial and societal windfall for Israel," said Seth Siegel, author of "Let There Be Water: Israel's Solution for a Water-Starved World."

Israel is in a leading position in the water-tech industry, which could reach \$10 to \$15 billion globally within the next five years, said Siegel in a phone interview from New York.

Interested companies are invited to submit a proposal/application to The Israel Innovation Authority and The Water Council of Wisconsin by March 31.

Case: 1:15-cr-00018 Document #: 268-1 Filed: 08/02/18 Page 32 of 55 PageID #:2081

READ MORE:

• Startup Israel • Israeli startups • Wisconsin • Startup Nation Central • water technology • wastewater

Israeli water desalination technique could help relieve Cape Town's thirst

Relying on solar energy, startup Tethys is more mobile, scalable, cheap and energy-efficient than other methods of getting drinking water from the sea

By URVASHI VERMA 11 March 2018, 1:52 pm



A man carries water at a source for natural spring water in Cape Town, February 1, 2018. (AP Photo/Bram Janssen)

For months, Cape Town, a city of four million people, has been facing the doomsday scenario of taps running dry. The city's Theewaterskloof Dam, a water reservoir which once supplied the city 50 percent of its supply, looks more like a desert area.

Two cataclysmic issues are at the center of Cape Town's water crisis. First, the scarcity of rainfall: in the past three years, the once reliable rains that fell during winter months have disappeared.

Second is the inequity in the distribution of water. South Africa's mostly white wealthy populations have access to water from their taps and its poor, primarily black, inhabitants live in informal settlements that are not equipped with infrastructure to receive clean drinking water, experts say.

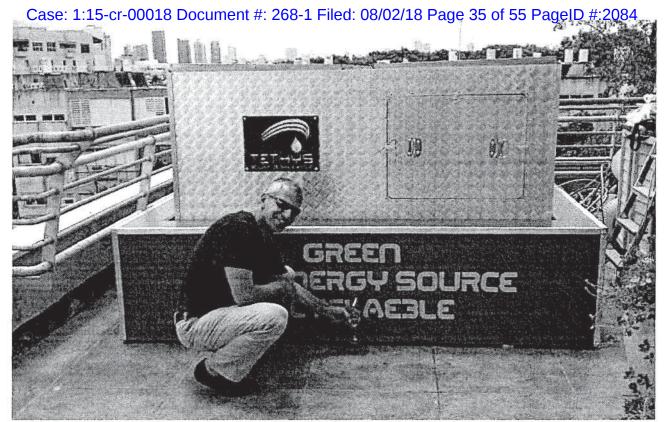
Since South Africa has a long coastline, two former Israeli rocket scientists, Dr. Moshe Tshuva, the head of the Energy Department at the Afeka-Tel Aviv College of Engineering, and Joshua Altman, the co-founders of Tethys Solar Desalinization (TSD), a Tel Aviv-based startup, say they may have a solution to Cape Town's water issues.



"Cape Town has plenty of sun, coastal seawater, and a need for a quick, affordable solution. TSD can be the perfect solution for the city's water shortage. Our system can be placed outside the city in any vacant area, preferably near the seaside to pump freshwater production into the town's reservoirs," Tshuva, who has been involved in the research and development of solar plants and green energy projects since the early 80s, said in an interview.

Technology from Israel could be a boon to Cape Town as reservoirs run dry, Israeli researcher Dr. Clive Lipchin, who attended a water symposium in Johannesburg last month, said in an interview with The Times of Israel.

The company has created what it calls a "weather box," which mimics and multiplies the natural atmospheric processes of evaporation and condensation to make filtered and clean freshwater from a variety of water sources, like the sea or brackish groundwater. The process uses solar heat to evaporate the water, leaving the contaminants at the bottom. The vapor is then collected and cooled back into liquid form, much like when it rains naturally, said Altman. The clean water is then collected into containers.



Dr. Moshe Tshuva, co-founder of Tethys Solar Desalination, and head of the Energy Department at the Afeka-Tel Aviv College of Engineering, demonstrating the desalination technology (Courtesy)

The modular solution can be deployed virtually anywhere with sunlight and a water source and is capable of producing up to 10,000 cubic meters a day, the company says.

Compared with existing methods of desalinization, TSD's purification process offers three distinct advantages, the company says; it is off-grid — it does not require pipelines; it requires no external energy source except for the sun; and it has no negative environmental impact — a zero global footprint.

Current desalination techniques come in two varieties: a process similar to boiling water to separate it from the salt, and a reverse osmosis technique that forces water through a membrane to filter out the salt. Both methods create a brine as a byproduct, which is then generally pumped back out to sea and can upset aquatic ecosystems, and require a vast amount of energy, experts say.

Bringing water to geographically widespread populations involves large amounts of capital investment and energy consumption, which is generally shouldered by governments, said Altman.

"We want to privatize water and make it accessible to people across the world without the need to rely on infrastructure from the governments and municipalities. This is a powerful shift from the existing utility-based model currently used in many parts of the world," he said.

By 2025, two-thirds of the world's population may face water shortages, and water scarcity is one the largest global risks in terms of potential impact over the next decade, according to the World Economic Forum.

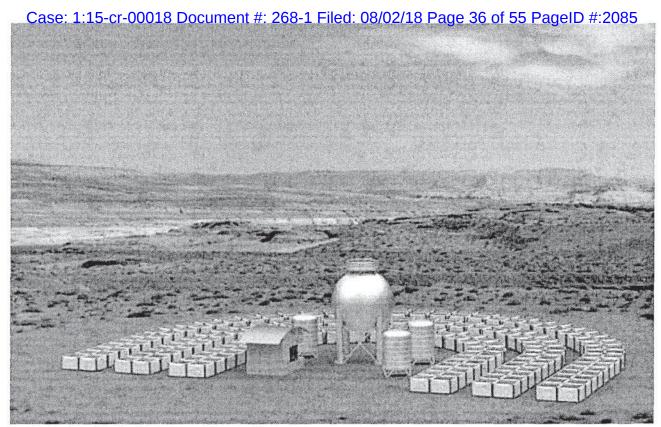


Photo depicting Tethys Solar Desalinization proposed pilot project (Courtesy)

Israeli technology may be particularly useful to Cape Town. Israel, with its arid climate and lack of freshwater, faced a years-long drought in the mid-to-late 2000s, depleting its natural freshwater stocks.

"Israel is a model for how that can be done in a very efficient way. We operate five of the world's largest desalination plants and we do it very efficiently," Lipchin, the researcher, said in the interview.

To date, TSD has secured \$500,000 in seed funding and is currently past prototype development phase. The company expects to launch pilots in Israel and Jordan within the next six months and is seeking investors to raise \$1.5 million for its series A funding round, said Altman.

READ MORE:

· Startup Israel · Israeli startups · water technology · South Africa · Moshe Tshuva · Joshua Altman · Cape Town

Startup sets sights on scent as new frontier for smartphone apps

Haifa-based Nanoscent says its technology will help you choose a perfume -- and find love

By URVASHI VERMA 26 March 2018, 2:10 pm



An illustrative image of a woman's nose, Israel's Nanoscent says it has developed an electronic nose for smartphones (bibacomua; iStock by Getty Images)

Your smartphone may soon be able to identify and analyze scent as easily as it scans a QR code or recognizes a voice. A Haifa-based company, Nanoscent, has developed an electronic nose that can detect odors and flavors through a smartphone. As an extra bonus, the technology might also help jump-start your love life, the company says.

Co-founded by Oren Gavriely and Eran Rom, Nanoscent is developing a smartphone app that, used together with a chip called a "scent recorder," can determine users' scent profile and help them select products, e.g., cosmetics, perfumes and soaps, best suited for them.

The sensor, which at the moment exists separately from the smartphone, will eventually be incorporated into the devices, Gavriely, who is also the CEO, said. Made up of nanoparticles, the sensor emits different signals based on the smell it is exposed to. Nanoscent's technology uses the interactions between the sensor and the chemical substances emitted from our body to generate a distinct pattern, or fingerprint, for each scent. It then uses this data to train its algorithm to identify different kinds of smells.

Once developed, the technology would possibly be the first that would allow smartphones to have the sense of smell, he said. Case: 1:15-cr-00018 Document #: 268-1 Filed: 08/02/18 Page 38 of 55 PageID #:2087

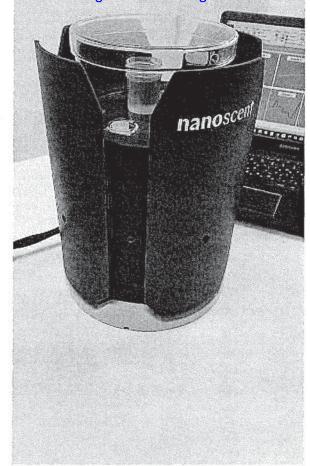
"Combining scent with technological innovation is something that hasn't yet been explored or fully realized," said Gavriely.

Even though our sense of smell strongly impacts how we think, feel and remember, it's not a part of the existing ecosystem of smartphone devices, which use voice activation, facial recognition, and motion detection to enhance our lives, Gavriely said.

Integrating scent recognition technology into devices such as smartphones can help to us to find solutions to many human problems, he added.

The company is in parallel developing a matchmaking application that can determine people's compatibility based on their scent profiles, Gavrieli said.

Nanoscent has collected 3,000-4,000 scent samples from 100 couples to create a "map of attraction," having studied couples married or together for at least a year to set up a baseline. The technology identified the smells of each individual in the couple, and created a map of smells that were attractive and best suited to the other. "We determined that people with these scents have a greater chance of being together," Gavrieli said. They then trained their machine learning algorithm to detect the various scents, and thus to identify potential matches.



Nanoscent's scent analyzer which collects data from a scent sample. (Courtesy)

Nanoscent expects to launch both products this year, Gavriely said.

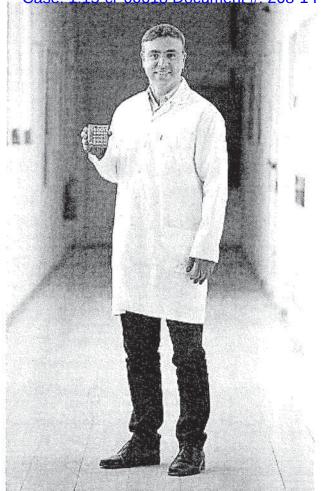
The core technology behind Nanoscent was invented by Hossam Haick, an Arab Israeli professor at the Department of Chemical Engineering and the Russell Berrie Nanotechnology Institute at the Technion – Israel Institute of Technology.

Haick, the company's chief scientific officer, first used the technology to detect breast cancer in patients by recognizing the changes in the smell of breast tissue nearly ten years ago.

The firm's technology is already being used to identify pregnancy in cows, the quality of medical cannabis and the presence of drugs in prison, said Gavriely.

The future scope of the technology is "wide open,"
Gavriely said, citing such uses as smart building
applications for the proper maintenance of bathrooms,
culinary businesses that want to record smells, automobile
companies that want to use scent to influence drivers, and
companies interested in enhancing sleep by using scent.

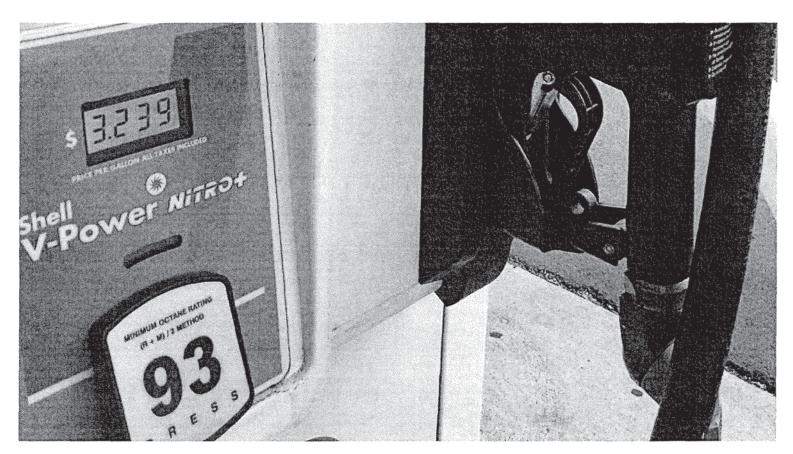
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The inventor of Nanoscent's core technology, Dr. Hossam Haick professor at the Department of Chemical Engineering and the Russell Berrie Nanotechnology Institute at the Technion – Israel Institute of Technology (Courtesy)

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· Startup Israel · Israeli startups · Nanoscent · smartphone apps



GAS PRICES EXPECTED TO RISE AS INVENTORIES DECLINE

FEBRUARY 23, 2017

By Urvashi Verma

onsumers can expect to pay more at the gas pump this spring as gasoline inventory levels are showing signs of dwindling.

The national average retail regular gasoline price decreased modestly last week to \$2.302 from \$2.307 per gallon in the week prior, according to the Energy Information Administrations's weekly petroleum

Case: 1:15-cr-00018 Document #: 268-1 Filed: 08/02/18 Page 41 of 55 PageID #:2090 outlook. In a year-over-year comparison, gasoline and diesel prices have increased nearly 24 percent or 58 cents, reported the EIA.

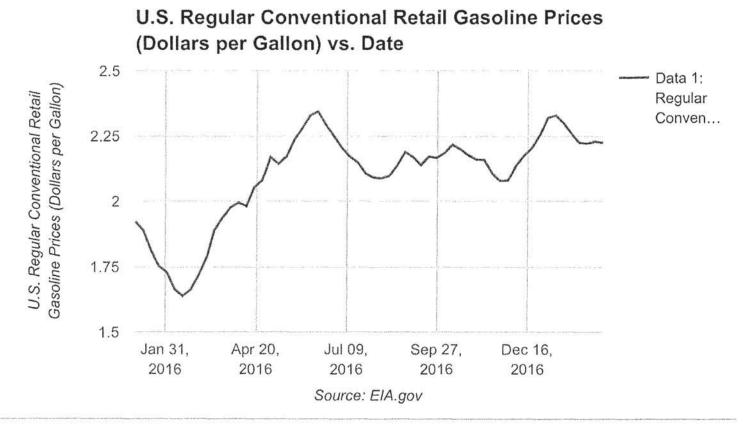
"Gasoline prices are strongly correlated with crude oil prices, which are approximately 75 percent higher than the same time last year," said Jeffrey Barron, analyst and economist at the EIA, a government agency.

Last week, crude oil inventories increased a meager half a million barrels. Motor gasoline inventories declined by 2.6 million barrels and distillate fuel inventories used in blending components also declined, by 4.9 million barrels. This resulted in total commercial petroleum inventories decreasing by 11.0 million barrels, according to the EIA.

A significant build in petroleum inventories last year kept oil prices lower, but data from the last quarter of 2016 and early this year indicates that this trend is changing, said Barron.

"The announcement from OPEC to reduce production starting January 2017 likely contributed to some expectation of reduced supply in the future, which would increase prices," Barron said.

Since last November, gas prices have steadily increased, by 14 cents per gallon, according to data service GasBuddy.



U.S. national average retail price for regular gasoline over the past 12 months. (Urvashi Verma)

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The largest seasonal jump in petroleum prices occurs from mid-February to Memorial Day due to seasonal transition and refinery maintenance.

These hikes occur because the Environmental Protection Agency and the Clean Air Act require a more expensive blend of gasoline in the summer months and refineries undergo maintenance work which causes a temporary drop in gasoline production that creates a pinch at the pump, said Dan McTeague, petroleum analyst at GasBuddy.

"Overall, most areas will see peak prices under \$3 per gallon," said Mc Teague. While that's far under prices a few years ago, watching prices surge every spring certainly brings heartburn with it," McTeague wrote in a GasBuddy blog post.

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EXXON MOBIL'S PROFIT PLUNGES 40 PERCENT

JANUARY 31, 2017

By Urvashi Verma

xxon Mobil Corp.'s profit dropped nearly 40 percent in the fourth quarter as the company reported a \$2 billion impairment in its natural gas assets and weaker profits from refining operations.

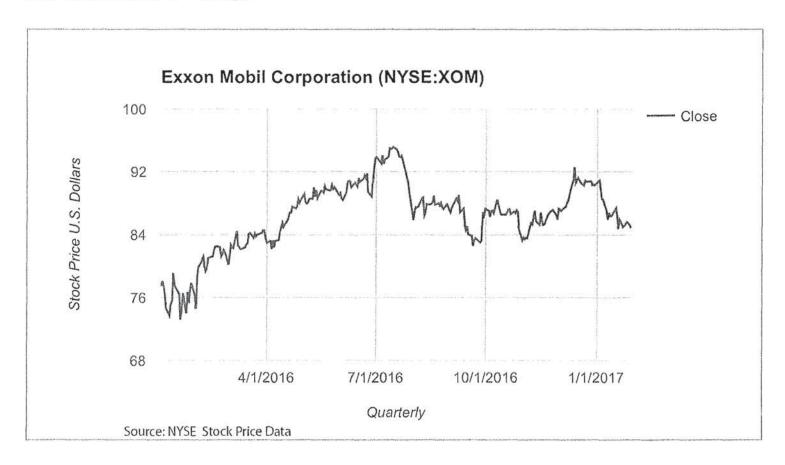
Nevertheless, the stock decreased a modest 1.14 percent and closed at \$83.89.

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Profit in the quarter declined to \$1.68 billion or 41 cents per diluted share from \$2.78 billion or 67 cents a share in the year-earlier quarter, sharply below the estimate of 81 cents per share compiled by Bloomberg.

"Financial results for the year were negatively impacted by the prolonged downturn in commodity prices and the impairment charge," said Chairman and CEO Darren Woods in the earnings conference call.

The company booked a \$2 billion reduction in value of undeveloped natural gas land assets in the Rocky Mountains obtained in the acquisition of XTO Energy in 2009. Under former CEO Rex Tillerson Exxon paid \$31 billion for XTO Energy.



Because Exxon's refining and chemical operations depend in part on purchased crude oil, the rise of crude prices to above \$50 per barrel has put pressure on the profit margins of those operations.

"Bullish oil prices do not bode well for Exxon. It has massive refining and chemical operations," said senior vice president and equities analyst Pavel Molchanov at Raymond James and Associates investment company. "Oil producers with high operating leverage will perform better in this environment," said Molchanov, referring to companies with comparatively low fixed costs.

For the full year, Exxon Mobil reported a 49 percent decline in net income to \$7.840 billion, or \$1.88 per diluted share, from \$16.1 billion, or \$3.85 per diluted share, in 2015. Revenue fell 13.43 percent to \$205 billion from \$236.81 billion.

Case: 1:15-cr-00018 Document #: 268-1 Filed: 08/02/18 Page 45 of 55 PageID #:2094 In the conference call the company declined to speculate about future operations and profits.

Last week it announced it will pay its regular quarterly dividend of 75 cents per share in March.

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RETAIL SALES HURT BY INCOME TAX REFUND DELAYS

MARCH 15, 2017

By Urvashi Verma

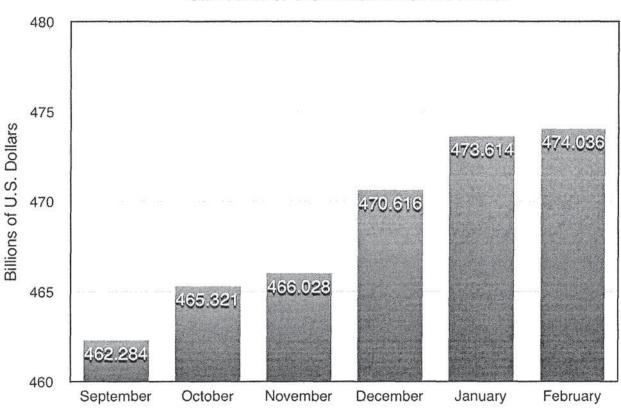
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ales at U.S. retail and food stores rose 0.1 percent in February, due in part to income tax refund delays that caused a slight consumer pullback, economists said.

The seasonally adjusted sales of retail and food services increased 0.1 percent in February to \$474 billion, compared with January's upwardly revised gain of 0.6 percent, according to data collected by the U.S. Census Bureau.

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Sales were on target, matching the 0.1 percent consensus estimate compiled by Bloomberg.



Total Sales of U.S. Retail & Food Services

Source: U.S Census Bureau

U.S. retail sales post the smallest monthly gain in February in the past six months. (Urvashi Verma/ Medill)

"While those numbers don't seem like much, they are better than we had expected, and also come in the context of significant upward revisions to prior estimates of January retail sales," said Richard Moody, chief economist at Regions Financial Corp., in an email.

Delays in income tax refund payments from the federal government dampened retail sales numbers in February, but some economists expect spending to pick up next month.

"The reason our expectations were so low for February sales is delays in processing tax refunds/credits meant many households were faced with a cash crunch in February, and there are anecdotal reports from various retail and restaurant chains of sluggish sales," said Moody.

Sales at restaurants and bars fell 0.1 percent in February after rising 1.7 percent in January.

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"By late February, however, those funds had largely been distributed, which means any shortfall in spending in February will be made up for in March," Moody said.

Sales at electronics and appliance stores fell 2.8 percent last month, the biggest segment decline, followed by department stores, with a 1.1 percent decline.

The biggest sales gains were in building materials, garden and supplies, with a 1.8 percent increase, and non-store retailers, which rose 1.2 percent.

The motor vehicle component, which accounts for one-fifth of consumer spending, fell 0.2 percent in February after declining 1.3 percent in January. Gasoline sales decreased 0.6 percent after increasing 2.1 percent in the month prior.

Excluding both autos and gasoline, sales rose 0.2 percent, compared with January's 1.1 percent increase.

"Although the gain in sales in February was not very broad-based – only four of thirteen major categories showed growth – it came despite a delay in tax refunds this year," said Brian Wesbury chief economist at First Trust Advisor, in his research note. "As a result, expect stronger numbers in the months ahead as these delayed tax refunds come in," he added.

Compared with a year ago, seasonally adjusted sales increased 5.7 percent. The largest gains from the year-ago-period were in gasoline stations sales which increased 19.6 percent followed by non-store retailers which rose 13.0 percent.

Photo at top: Nationwide February sales at restaurants were lower due to delayed federal tax return payments. (Urvashi Verma/MEDILL)

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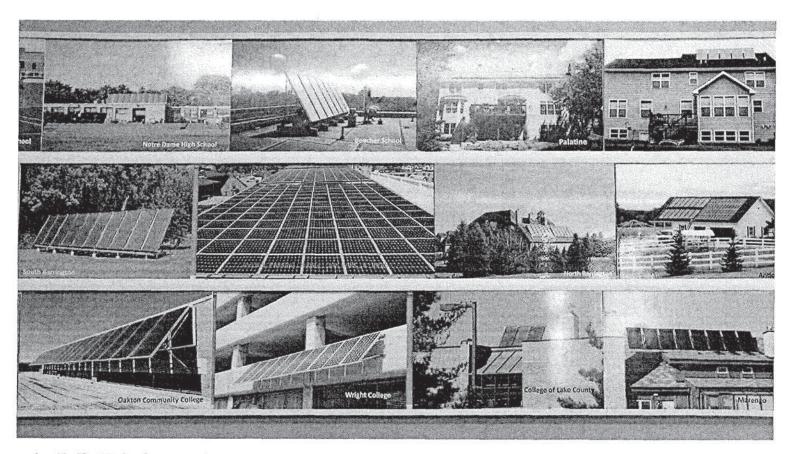












A PRESCIENT ENTREPRENEUR RIDES THE SOLAR-POWER WAVE

MARCH 16, 2017

By Urvashi Verma

he anticipated ending of the 30 percent Investment Tax Credit for solar power installations caused a record-breaking boom in the solar industry last year. Now that the credit has been extended until 2021 sales are expected to surge again as both electric utilities and consumers take advantage of the federal incentive before it expires.

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"That was definitely one of the reasons we did it. We did not know how long it would last. At the time we thought it was ending in 2016. My husband and I wanted to make sure we got the 30 percent credit," said Nicole Virgil, who installed a 7.1-kilowatt solar array on her house in Elmhurst, III., last year.

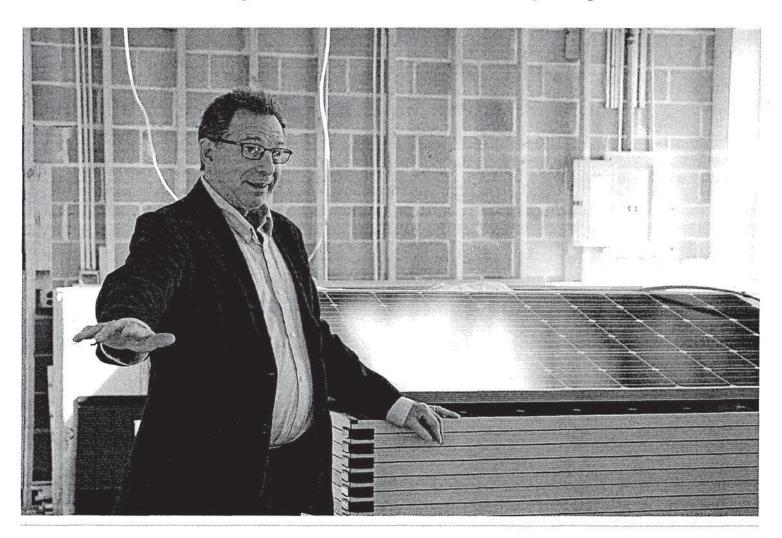
The U.S. solar market doubled its annual record last year, topping out at 14,625 MW of solar electric, or photovoltaic, panels installed, a 95 percent increase over the 7,493 MW installed in 2015.

"When we first started no one believed that solar would be suitable for the Midwest, but the economics have changed dramatically," said Brandon Leavitt, who founded Solar Service Inc., in Niles, III., nearly 40 years ago.

What started with a first solar thermal installation in Leavitt's parents home has led to a solar thermal heat and solar electric installation business with \$3 million in yearly revenue and 14 full-time employees.

Now with a growing acceptance of solar power, Solar Service is booming.

Since its inception, Solar Service has installed more than 2 megawatts in solar electric systems and over 2,000 solar thermal systems; with installations ranging from single family homes to large scale commercial sites across Illinois including renovations for Northwestern University's Kresge Hall.



The solar industry has been increasing at unprecedented rates. In 2017 the U.S. solar industry is expected to install more than 14 gigawatts, nearly double the amount installed in 2015, according to the Solar Energy Industries Association.

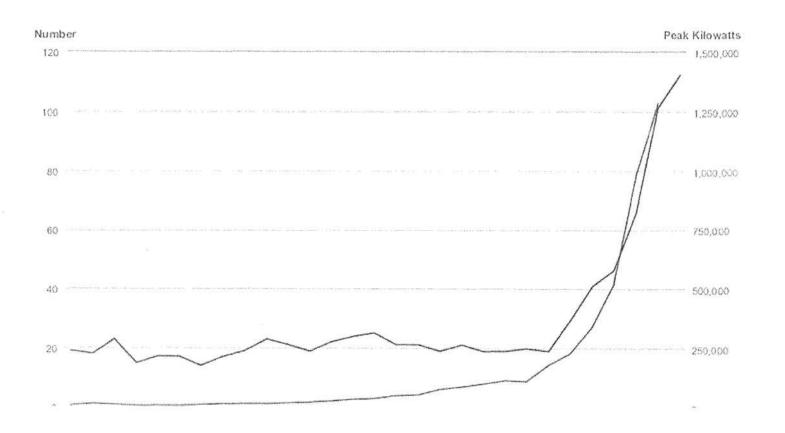
Fueling the fast growth for solar have been a number of federal and state incentives including the Solar Investment Tax Credit passed in 2006 that offers a 30 percent credit towards the total cost of installing solar panels for either heat or electricity in homes. This credit is available through the end of 2019; after that, it goes down each year and stops at the end of 2021.

"There is no limit on the amount of credit you can take. So regardless of how much you spend, you will be eligible for 30 percent," said Leavitt.

The second incentive is net metering, which allows solar panel owners to sell excess electricity to their utility company at a retail rate and receive credit on their bill. The average retail price of electricity in Illinois is 12 cents per kilowatt-hour, about a penny less than the national average.

According to the U.S. Energy Information Administration, net-metered solar saw significant growth in 2015, adding over 2,100 megawatts in generation capacity. This represents the fourth consecutive year of annual growth above 50 percent.

Table 10.8 Photovoltaic Cell and Module Shipments by Type, Trade, and Prices, 1982-2010



- U.S. Companies Reporting Shipments(Number) - Shipments Total Cells and Modules(Peak Kilowatts)



Source: U.S. Energy Information Administration

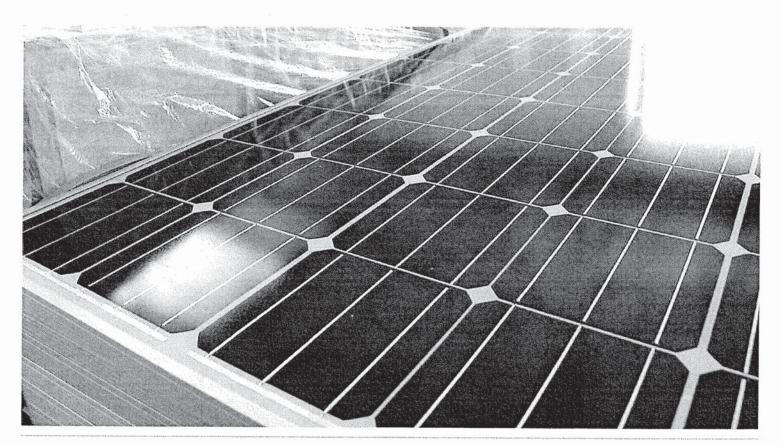
Number of U.S. companies reporting solar module shipments, and total shipments of solar cells and modules, 1982-2010. (Urvashi Verma)

Consumers of utilities have always been used to "renting" electricity, Leavitt said, but net metering has changed the mindset from renting to owning your own. This has been a strong motivator for customers to adopt solar, he said.

In addition to the federal tax benefit, many states offer rebates and cash incentives in order to meet renewable energy targets. These rebates can offset the cost of a solar installation by as much as 40 percent to 45 percent. Illinois does not offer these rebates.

Illinois residents can, however, receive cash payments from utility companies for the carbon-free energy from their solar panels called Solar Renewable Energy Credits or SRECs. Utility companies are required to meet the Renewable Portfolio Standards put in place by the state and can buy these credits directly from owners to help meet their requirements.

For example, a coal plant may buy SRECs as a way to offset the greenhouse gasses it emits. The price of SRECs in Illinois is expected to average \$168 in 2016.



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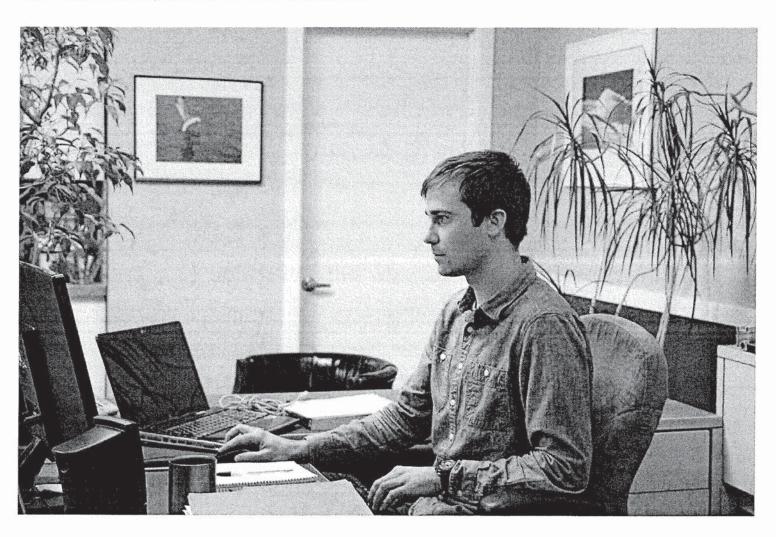
Photovoltaic electric panels ready to be installed for a new project in Wilmette, III. Solar Service uses a German manufacturer, although the majority of Solar panels are manufactured in China and the Philippines.

So let's take a look at the numbers. The average U.S. household uses 11,000 kilowatt-hours of electricity per year, according to the federal Energy Information Administration. The average rate of electricity in Illinois is 12 cents per kilowatt-hour. Based on these numbers families in Illinois spend an average \$1,320 per year on electricity. Installing a 5-kilowatt system will decrease the electric bill by about 50 percent to \$660 per year, according to the Illinois Solar Energy Association.

A typical five-kilowatt solar system costs about \$21,250. Within the first year, you would save close to \$660 on your electric bill based on the estimate above. After applying the income tax credit, which in this case would be \$6,375, and an additional \$168 from SRECs, in the first year you would recover 33.8 percent of the total cost of installation, or \$7,203.

Considering the expected increases in electricity prices due to variable rates plans and the EPA's regulating the emissions of CO2 from power plants, electricity solar panel owners could save much more in the coming years, Leavitt said.

With so many benefits for solar electric installation, it's no wonder that Solar Service's business has shifted to solar electric panels from solar thermal heat.



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Garrison Reigel started at Solar Service as an intern more than 10 years ago and now designs the photovoltaic solar array systems for the company. (Urvashi Verma/ Medill)

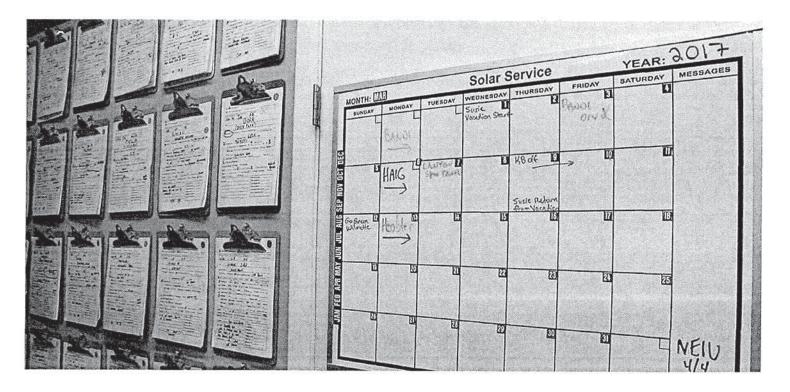
"Eighty to 90 percent of the business we do today is in solar electric. I don't think [Leavitt] expected when he hired me 10 years ago that there was going to be such a dramatic shift, said Garrison Riegel, who designs the company's solar electric systems.

The cost of per watt of solar panels has declined dramatically. Today, the price per watt is between \$3 to \$4 compared with \$76 in 1977 when Leavitt first started his company. The per watt cost of solar electric systems has gone down sharply due to competitive market forces that have yielded lower solar module prices and greater efficiency of solar panels and equipment.

But that doesn't seem to concern Leavitt in the least. "It doesn't bother me that the prices have decreased because the number of projects I do today has increased so much more," said Leavitt. "It gives me the chance to hire more people and get more solar out into the marketplace. It's definitely a win-win for consumers, small businesses and clean energy," he said.

"The installation process is pretty quick and easy," said Erik Carlberg, who handles the permitting for Solar Service, "between one to three days depending on the scale of the project. But getting approval from the municipalities and permits approved can take up to six to eight weeks." Both the installers and city or municipality conduct pre- and post-installation inspections to make sure that everything is up to code, added Carlberg.

Solar Service currently has more than 40 projects in its pipeline. Leavitt says he expects to hire more people if business continues at this rate.



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Photo at top: Niles-based Solar Service installations across the Chicago area.